

Stakeholder Engagement in PES Research

Task 3 Update to the Vermont PES Working Group

Alissa White

May 15th, 2022



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Scope of work update

Original scope of Task 3:

“Work closely with and on behalf of the PES Working Group to engage farmers and other stakeholders via surveys and focus groups to capture preferred and minimum level of payment they would be willing to accept. “

- Original proposed scope included:
 - *1 Survey*
 - *3 Focus groups*

Scope modification & additional work:

- Pivot focus groups to engage conservation districts and farm advisor perspectives
- Conduct in-depth interviews with farmers about conservation program experiences and payment levels

Big picture:

- 1 Survey in February – April 2022
- 1 Focus group with farmers in January
- 2 Focus groups with conservation districts and farm advisors
- 31 interviews with farmers

Stakeholder engagement & contingent valuation

Farmers

- Focus Groups
- Survey
- Interviews

Farm Advisors

- Focus Groups

Farmer advisors

Farmer advisors are the link between many farmers and programs.

The implementation of a PES program in Vermont rests on collaboration with farm advisors.



Focus groups with NRCD Staff, Extension and Farmer Advisors



- Two focus groups with farmer advisors
 - March & May 2022
 - 90 minutes long
 - Virtual format, IRB approved research
 - Recorded, transcribed and open-coded
- 18 participants from Vermont
 - Natural Resource Conservation Districts
 - UVM Extension
 - Non-profit organizations
 - Independent agronomy & farm consultants
- Semi-structured questions about:
 - Hopes & concerns
 - Performance-based programs
 - Compatibility with other programs
 - Program design
 - New knowledge needs

PES Program Design Recommendations



- **Compensate** adequately.

- Make up the cost gap to allow farmers to invest in conservation on their own too

*“There are too many programs, **and I’m worried** this will be another program that **payments barely justify participation** for. It will just **add a burden** of more programs to enroll in but the **payment numbers will be really low.**”*

- **Look up.**

- Think long term
- Synergize with efforts outside Vermont

*“I hope that that that's how we look at it and approach it-- as **something really big** and something that farms in the state are gonna **use for years and years**”*

PES Program Design Recommendations



- Design for **compatibility and synergy** with other **paperwork**.

- Pay-for-phosphorus
- Nutrient Management Plans
- Organic certification
- FAP

*“The sign up and stuff for FAP programs is really easy. And you know the that **web based enrollment is nice.**”*

- **Avoid redundancy & duplication.**

*“I hear from organic producers all the time: ‘is there a way we can get the information that we provide them in a nutrient management plan **to a point where they can just take that** and give it to their organic certifier or reviewer on the years end?’ “*

PES Program Design Recommendations



- Design for **compatibility and synergy** with other **paperwork**.

- Pay-for-phosphorus
- Nutrient Management Plans
- Organic certification
- FAP

*“The sign up and stuff for FAP programs is really easy. And you know the **that web based enrollment is nice.**”*

- **Avoid redundancy & duplication.**

*“One of the biggest issues we're having right now is that the GIS that they use versus the GIS that we use **are not compatible.** ... **we're literally hand drawing fields.** Again, we're hand entering data. And we have it all in formats that I feel like **they could figure out a way to bridge it**”*

PES Program Design Recommendations



- Invest in **data interoperability**, software expertise, and **accessibility**.

*“if we can shape that program to basically just be this huge record keeping database, and once the farms are built into it, **as changes are made on farms ... we don't have to redo everything every year.** I think that I think Vermont could really be a leader on that front if, as long as the **people that are managing the software are really listening to us**, the service providers that handle the data, and **build the bridges between the softwares that we're using**, the TAS and NRCS, FSA, you name it and building these bridges into that, this, this, what could be just this huge database of of records that show what farms are doing across the landscape”*

- Consider **3rd party** verifier or data management to retain data privacy

“at the end of the day ... Anonymity and privacy is still very, very important “

PES Program Design Recommendations



- Value **research**.

Let's learn as much as we can about as many acres as we can in the state. So that we can know what's working, what's not working,"

- Establish **knowledge** and **trust** in the **outcomes**.

- Proactively address uncertainty in measurement and modeling approach.
- Consider the first phase being a huge data dump to create a basis for our understandings or a model

*There's gotta be **trust in the outcomes** that are being reported by both the farmers and by whoever's providing the payment.*

PES Program Design Recommendations



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- Establish **knowledge** and **trust** in the **outcomes**.

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*“The biggest issue that my farmers are having with wrapping their head around the performance program is **not knowing** ... the weight of which practice of what each practice carries, and when you ask ... the folks running that program. **They don't even know** “*

PES Program Design Recommendations



- Value **research**.

Let's learn as much as we can about as many acres as we can in the state. So that we can know what's working, what's not working,"

- Establish **knowledge** and **trust** in the **outcomes**.

- Proactively address uncertainty in measurement and modeling approach.
- Consider the first phase being a huge data dump to create a basis for our understandings or a model

*I anticipate this much change based on the model we're using, and in January when we sat down to figure out my payment, **the models changed**. That's that's really **discouraging for a farmer***

PES Program Design Recommendations



- **Compensate** adequately.
- **Look up.**
- Design for **compatibility and synergy** with other **paperwork.**
- **Avoid redundancy** & duplication.
- Invest in **data interoperability**, software expertise, and **accessibility.**
- Consider **3rd party** verifier or data management to retain data privacy
- Value **research.**
- Establish **knowledge** and **trust** in the **outcomes.**

PES Program Design Recommendations



- **Compensate** adequately.
- **Look up.**
- Design for **compatibility and synergy** with other paperwork.
- **Avoid redundancy** & duplication.
- Invest in **data interoperability**, software expertise, and **accessibility**.
- Consider **3rd party** verifier or data management to retain data privacy
- Value **research**.
- Establish **knowledge** and **trust** in the **outcomes**.

Engaging farmers in Vermont on PES and meaningful compensation

Phase 1: Farmer Focus Group

- January 2022
- Input on survey development, program design & alternative forms of compensation
- Complete

Phase 2: Survey

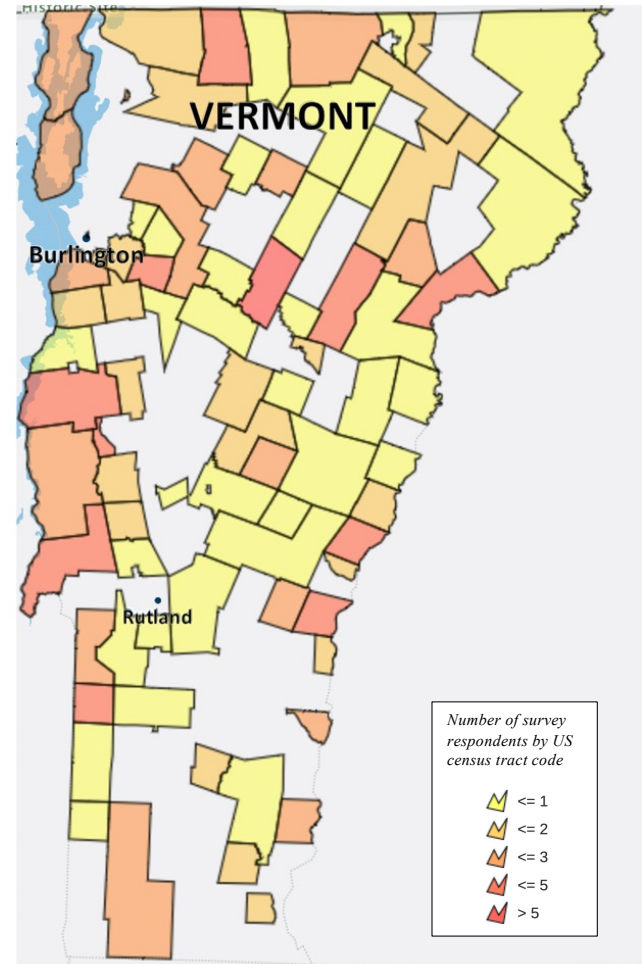
- February & March 2022
- Questions about compensation, conservation practice, ecosystem services and farm
- Complete

Phase 3: Interviews

- March & April 2022
- Conversations about meaningful compensation and performance-based programs
- **Deadline? Analysis and reporting waiting on contract modification**

Vermont Farmer Ecosystem Services and Conservation Survey

- **Collaboratively developed** over 3 months
- Circulated via farm organizations, key contacts, communication networks & media by PES Working Group
- February – April 2021
- **179** valid responses
- **150** farmers filled out most of the questions
- Median duration of time to complete the survey was **28 minutes**
- \$25 compensation



Farmer Survey Insights

- **99%** of Vermont farmers believe improvements in soil health have **benefits for the environment** off their farm. **95%** of Vermont farmers believe they should take additional steps beyond required practices to **protect soil health**.
- **90%** of Vermont farmers believe they have a responsibility to **be part of climate solutions** and **82%** of Vermont farmers believe we are in a **state of climate emergency** due to human caused climate change.



Farmer Survey Insights

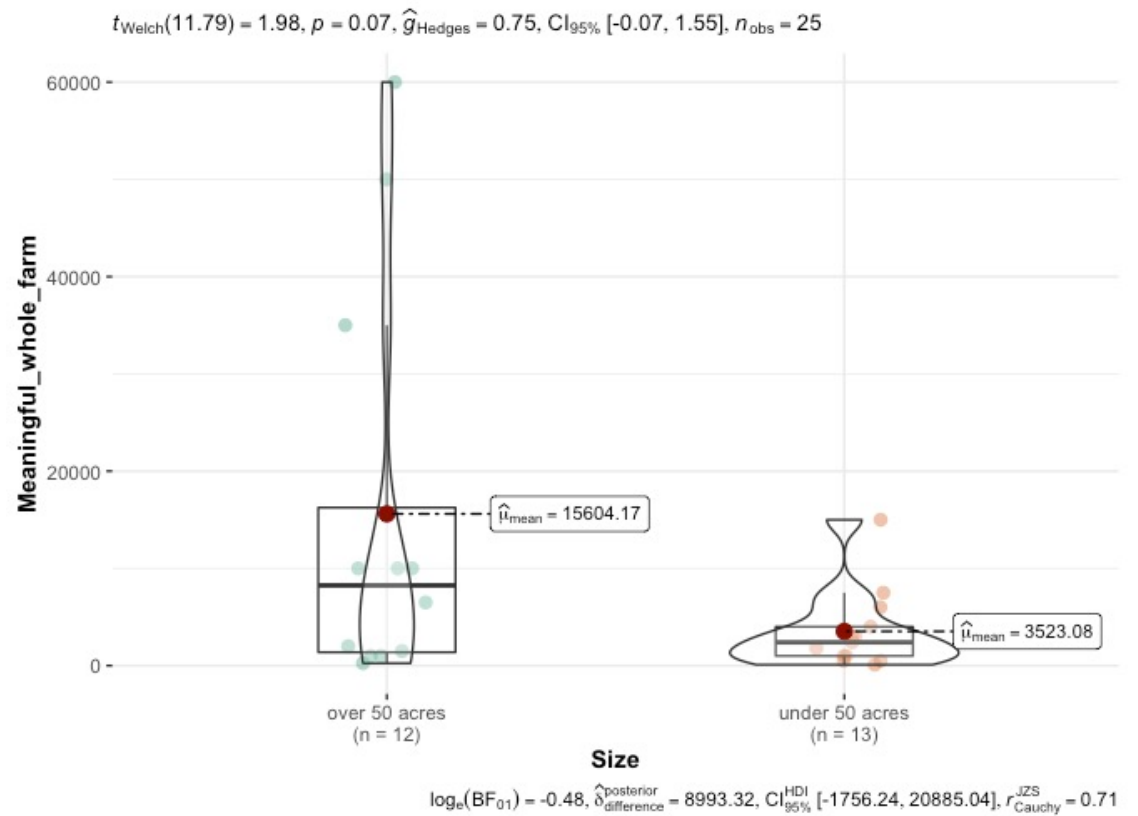


- 99% of Vermont farmers believe improvements in soil health have **benefits for the environment** off their farm. 95% of Vermont farmers believe they should take additional steps beyond required practices to **protect soil health**.
- 90% of Vermont farmers believe they have a responsibility to **be part of climate solutions** and 82% of Vermont farmers believe we are in a **state of climate emergency** due to human caused climate change.
- 94% of Vermont farmers believe they have the **knowledge and technical skill to enhance soil health** on their farm, yet only 58% have the **financial capacity** to do so.

Farmer Survey Insights

Payment levels differ by farm size

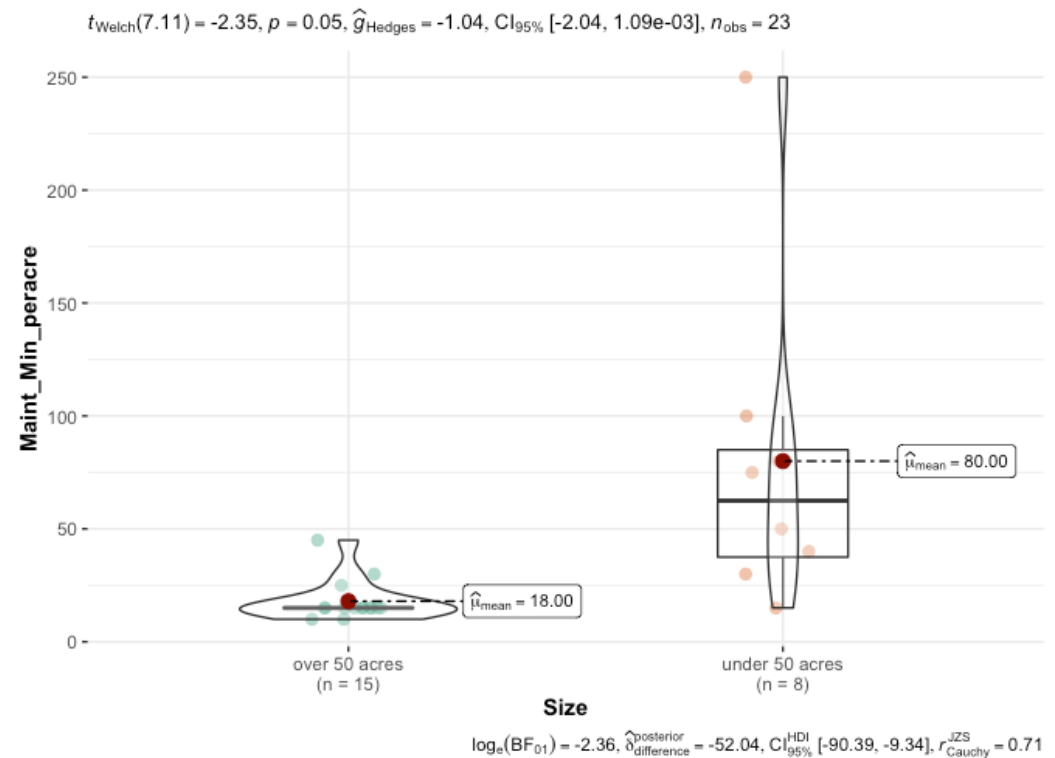
- For farms under 50 acres, average meaningful payment level is \$3,523
- For farms over 50 acres, the average meaningful payment level is \$15,604



Farmer Survey Insights

Payment levels differ by farm size

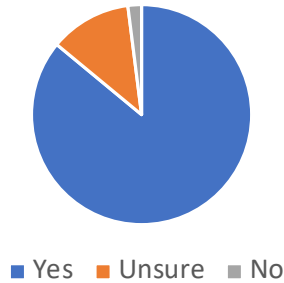
- For farms under 50 acres, average minimum payment per acre rates are **\$80/acre for maintaining** soil health and **\$802/acre for enhancing** soil health
- For farms over 50 acres, the average minimum payment per acre is **\$18/acre for maintaining** soil health, and **\$55/acre for enhancing** soil health.



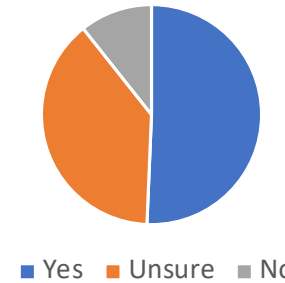
Farmer Survey Insights

- **86%** of farms would allow a 3rd party to conduct advanced soil measurements on their farm.
- **76%** would prefer to receive training to eventually conduct advanced soil testing themselves.

Would you allow a 3rd party to conduct the advanced soil measurements on your farm to participate in a program?

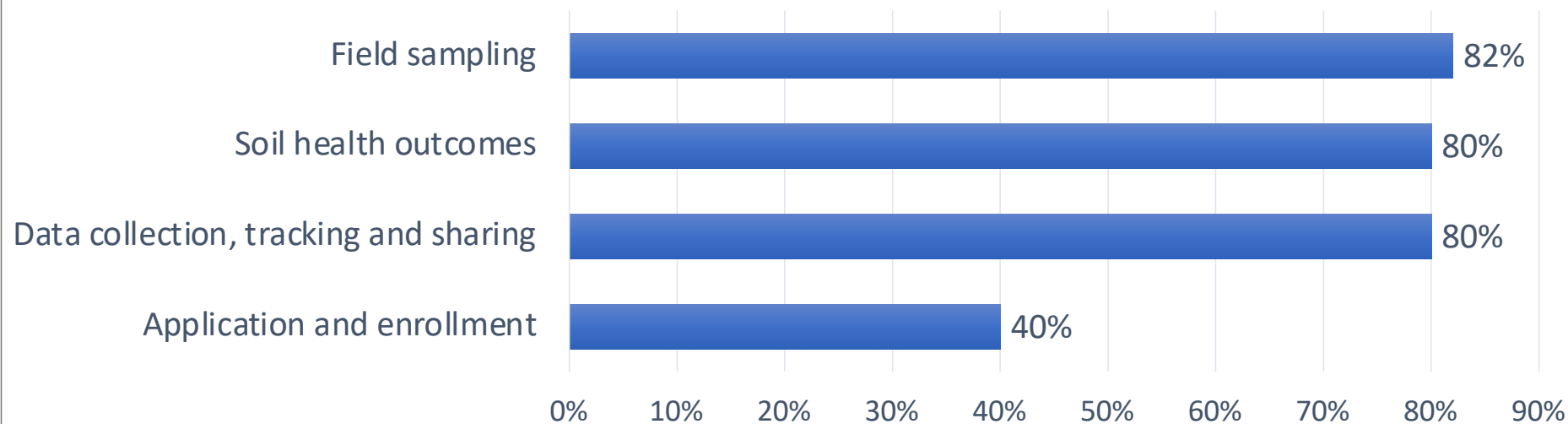


Would you prefer to receive technical assistance so that you may eventually conduct these soil measurements yourself?



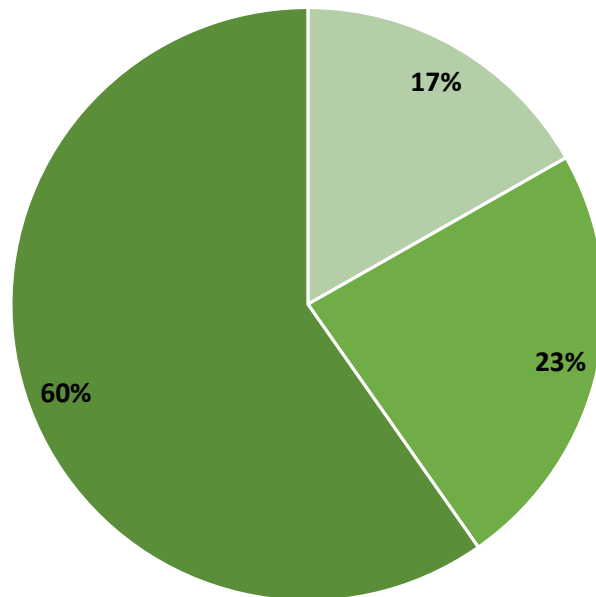
Farmer Survey Insights

Which aspects of the program should you be compensated for?



Farmer Survey Insights

Preference for **Reduced Enrollment Burden** vs Privacy



- My data privacy is important and enrollment paperwork should not be shared between programs.
- Neither is more important to me
- The application for new conservation incentive programs should be combined with existing conservation incentive program paperwork as much as possible to save me time.

Payment level preferences from farmers

Data source	Basis of payment	Details	estimate
survey	Data reporting	Minimum per farm	\$ 700.00
survey	Soil sampling	Minimum per farm	\$ 300.00
survey	Per acre payment	Preferred per acre	\$ 206.00 /acre
interviews	Maintain soil health	Preferred per acre	\$ 186.39/acre
interviews	Maintain soil health	Min. per acre	\$ 39.57 /acre
interviews	Enhance soil health	Preferred per acre	\$ 843.15 /acre
interviews	Enhance soil health	Min. per acre	\$ 269.14 /acre
interviews	Whole farm	Meaningful whole farm	\$ 10,000.00
survey	Whole farm	Meaningful whole farm	\$ 5,000.00

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Mean values from interviews and surveys

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Alissa.White@uvm.edu



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Farmer Focus Group



- January 2022
- “PES Farmer Think Tank”
- # of attendees
- Questions about:
 - Survey development
 - Program design
 - Alternative forms of compensation

Farmer Focus Group & Interviews

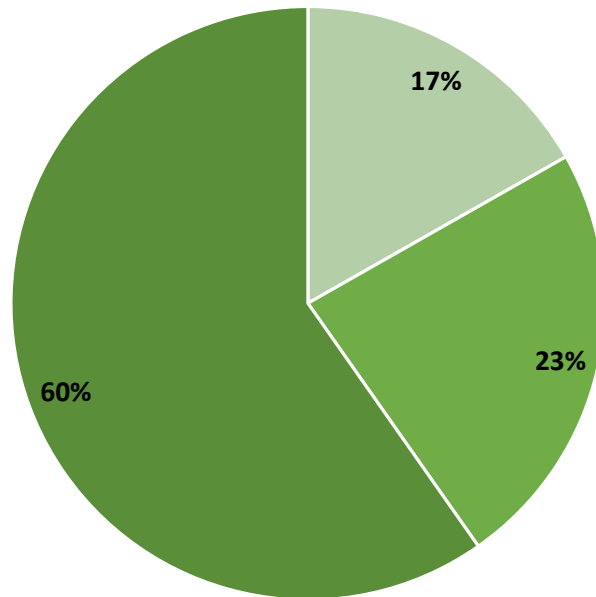


Important themes about program design:

- Compensation needs to be “worth it”
- Different kinds of burden can deter participation
 - Enrollment paperwork and data reporting
 - Cost of management changes & farm activities
 - Distrust of government
- Value comes in many forms of compensation
 - Monetary payments offset costs
 - Learning & technical assistance
 - Soil health & future benefit to productivity
 - Information & data

Farmer Survey Insights

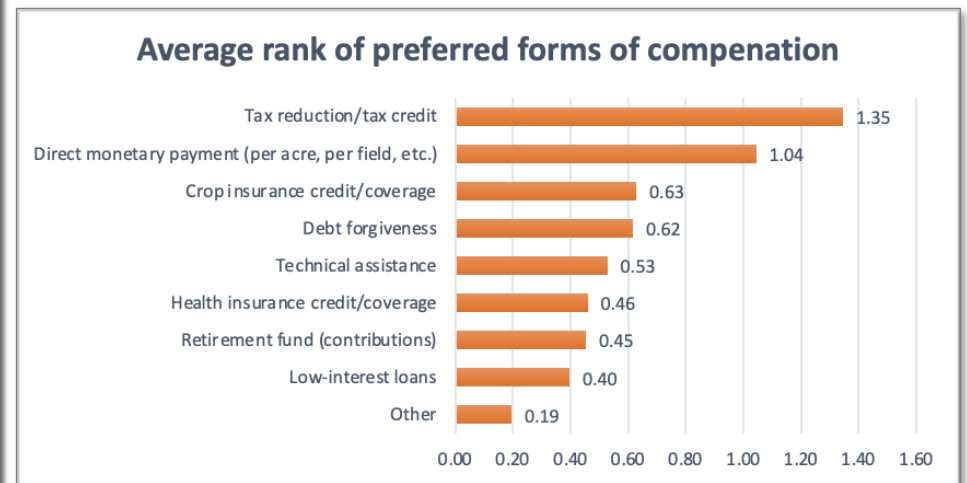
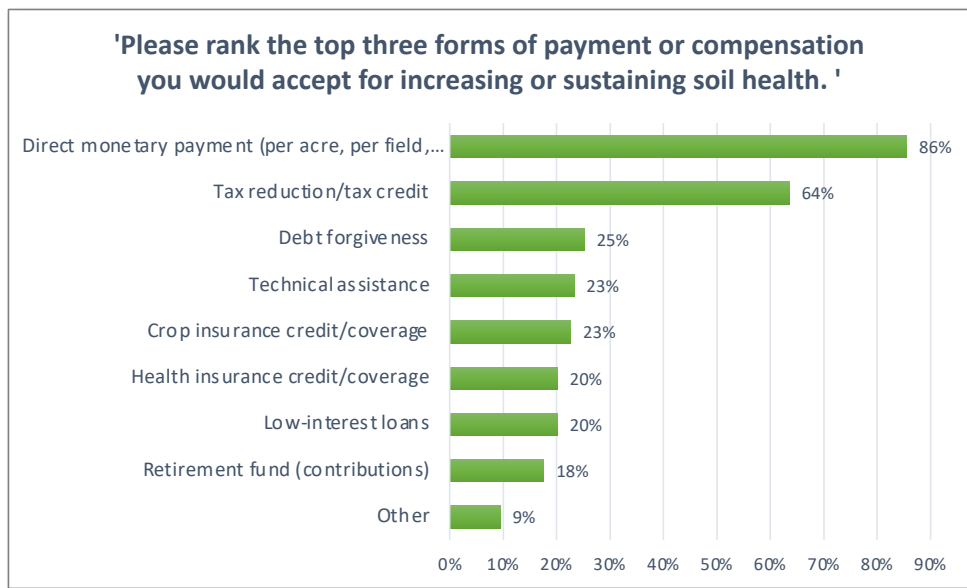
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Farmer Survey Insights

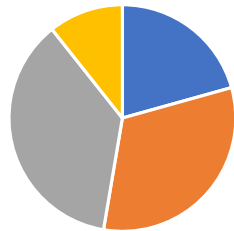
- **86%** of farmers ranked **direct monetary payment** in their top 3 preferred forms of compensation
- **Tax reduction or tax credit** had the highest average rank of all options



Farmer Survey Insights

- **40%** of farmers felt they should be compensated for the **burden of enrollment** associated with a new PES program
- **80%** of farmers felt they should be compensated for the **burden of data collection, tracking and sharing** associated with a new PES program
- Most farmers estimated it would take a few days to collect that data
- Farmers were asked to estimate a fair hourly rate for this activity. The median rate was \$25/hour
- Based on this data, we estimate the lower end of enrollment compensation at **\$800 per farm** would incentivize participants who were deterred by perceived enrollment and data reporting burden.

Approximately how much time do you think it would take you to collect data on your management practices, conservation strategies, soil test results and other areas of your farm operation and report it to a new PES program?



■ Half a day or less ■ A whole day ■ A few days ■ A week or more

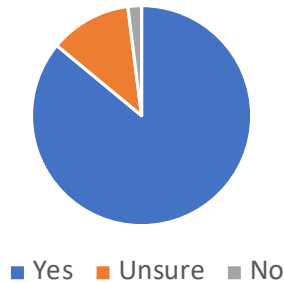
Preferred hourly compensation for collecting and sharing farm management and soil test data:

Low: \$ 0.00
Median: \$ 25.00
Average: \$ 35.00
High: \$ 300.00

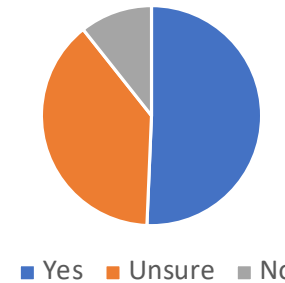
Farmer Survey Insights

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Would you allow a 3rd party to conduct the advanced soil measurements on your farm to participate in a program?

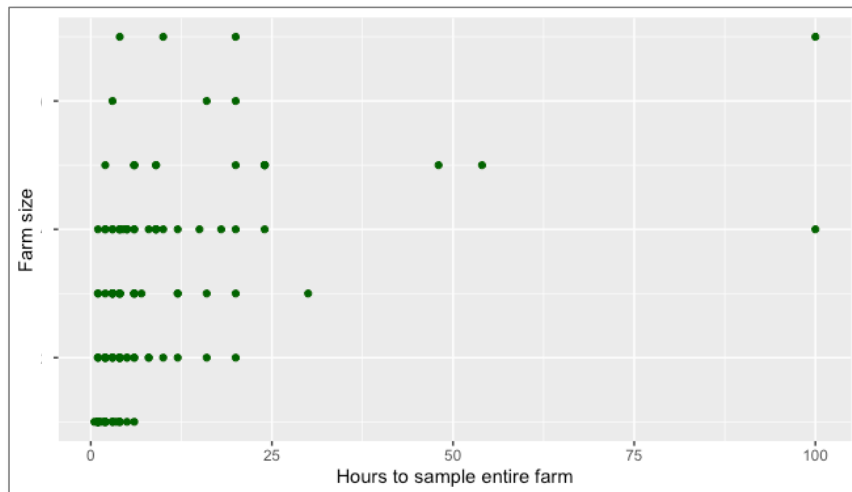


Would you prefer to receive technical assistance so that you may eventually conduct these soil measurements yourself?



Farmer Survey Insights

- **82%** of farmers felt they should be compensated for the **burden of soil sampling** associated with a new PES program
- Most farmers estimated it would take a **2 – 9 hours** to collect basic soil samples from all of their fields.
- Farmer were asked to estimate a fair hourly rate for this activity. The median rate was **\$25/hour**
- Based on this data, we estimate compensation at **\$225 per farm** would incentivize most participants who were deterred by the burden of basic soil sampling.
- However, for larger farms this activity could take up to 50 or 100 hours, and may require greater compensation to incentivize participation.



Preferred hourly compensation for conducting basic soil sampling:

Low: \$ 0.00
Median: \$ 25.00
Average: \$ 32.00
High: \$ 120.00

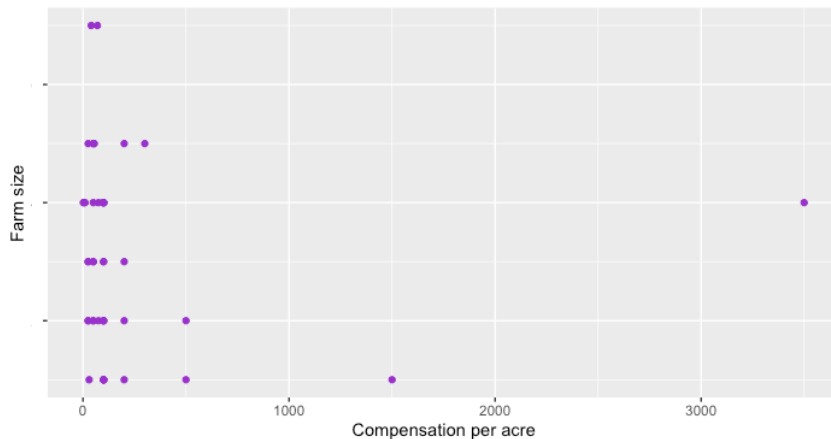
Preferred hourly compensation for conducting advanced soil sampling:

Low: \$ 0.00
Median: \$ 30.00
Average: \$ 37.00
High: \$ 2000.00

Farmer Survey Insights

“If a program compensated you based on how your soil test results compared to soil health threshold goals set by the program, how much do you believe you should be compensated for meeting those goals?
... We understand this is a complex question with many factors. This question will be explored in more depth during follow up focus groups and interviews.”

- **76%** would prefer to receive training to eventually conduct advanced soil testing themselves.



Preferred compensation per acre:

Low: \$ 0.00
Median: \$ 100.00
Average: \$ 210.00
High: \$ 3,500.00

Preferred compensation whole farm:

Low: \$ 50.00
Median: \$ 800.00
Average: \$ 5,173.00
High: \$ 50,000.00

Farmer Interviews

Topics

- Administrative burden
- Compensation for maintaining high soil health
- Compensation for enhanced soil health
- Compatibility with existing programs/practice-based payments (enrollment, “stacking” approach, etc.)
- Compensation structures
- Value of “good PR”
- Universal basic income

Farmer Interviews

Emerging themes

- Administrative work strongly influences farmers' decision to participate in programs.
- Farmers are largely resistant to the idea of being paid for maintaining soil health.
 - Instead, strongly in favor of access to more in-depth soil health testing, individualized planning with TSPs, and insight/collaboration with other farmers.
- When thinking about *enhancing* soil health, farmers are somewhat more easily able to generate dollar values/select prompted dollar values.
 - Largely use cost of new equipment, practices, land taken out of production for their calculations.

Farmer Interviews

Emerging themes (cont.)

- Farmers largely support the idea of co-eligibility, qualified enrollment, data transferring, etc. between. Also largely support “stacking” performance-based compensation on top of practice-based compensation and vice versa.
- Strong support for tiered-approach, mixed opinions on per acre vs. field vs. farm that needs further analysis.
- Most farmers find value in “good PR” for their farm through potential participation in a PES program.
- Mixed opinions on universal basic income that needs further analysis.

Potential Tier Design

Tier 1

- Advanced soil testing, TA & farmer research network

Tier 2

- Certification, advanced soil testing, TA, farmer research network

Tier 3

- Monetary performance payment level 1, Certification, advanced soil testing, TA & farmer research network

Putting some things together based on our research Farmer compensation & Program costs

- **Farmer compensation package**
 - **Financial**
 - Enrollment and data reporting burden: ~ \$800 per farm
 - Basic soil sampling: ~ \$225 per farm
 - Performance payment options:
 - ~ \$40/acre (Task 5 report), Or
 - ~ \$150/acre (Task 3 PES survey), Or
 - At least \$800 to \$5,000 per farm (Task 3 PES survey)
 - Complements practice-based cost share programs
 - **Information & learning**
 - Contextualized soil health data
 - Planning support
 - Facilitated education
 - **Marketing & reputation**
 - Certification
- **Additional costs to program**
 - Advanced soil sampling & lab analyses: \$60 to \$200 per field
 - Program admin (AAFM)
 - Technical advising & research network facilitation (partner organizations)

Farmer Interviews

Other themes of interest

- Rewarding farmers for protecting/not farming critical habitats such as wetlands.
- Future of farming in VT.
- Hesitations with using soil measurements as basis for compensation.
- Small and/or vegetable farmers role in this line of work.
- Alternative forms of compensation.
- Past and current frustrations/positive experiences with existing programs, grants, etc.
- Current use exemption

PES Program Design Recommendations

- Key program design ideas:
 - Design for compatibility and synergy with other paperwork.
 - Invest in data interoperability, software expertise, and accessibility.
 - Consider 3rd party verifier or data management.
 - Avoid redundancy & duplication.
 - Compensate adequately.
 - “There are too many programs, and I’m worried this will be another program that payments barely justify participation for. It will just add more programs to enroll in but the payment numbers will be really low.”
 - Look up.
 - Think long term
 - Synergize with efforts outside Vermont
 - *“I hope that that that's how we look at it and approach it-- as something really big and something that farms in the state are gonna use for years and years”*
 - Value research.
 - *“Let's learn as much as we can about as many acres as we can in the state. So that we can know what's working, what's not working,”*
 - Establish knowledge about and trust in the outcomes.
 - Proactively address uncertainty in measurement and modeling approach.
 - Consider the first phase being a huge data dump to create a basis for our understandings or a model

Focus groups with NRCD Staff, Extension and Farmer Advisors



- Concerns:

- Complexity & high level of knowledge needs
 - We don't have the data collection yet
 - Inter-annual variability & background data
 - Some things can't be measured
 - PfP asks for same data into FarmPrep that we put into GoCrop. Onerous for farmers and TSPs. Duplicative data entry.
- Some farms might get left out
- Relies on farmers self-funding practices implementation, and may leave some farmers out.
- Redundancy with other programs
- Some farm are missing out on existing programs because they don't have enough staff

Focus group with NRCD Staff



- Optimism & program design advice
 - Compatibility with other programs NMPs, GoCrop
 - Sees it as the next step past 'pay for phosphorus'
 - Offers some compensation for maintenance
 - Practices based programs may not get us the outcomes we want
 - Limit the number of contacts (PfP had 5 people reach out to a farmer)
 - Organic cert could be a good model, and then farmers could use it as a label for public visibility
 - Messaging should support the image of farmers as stewards of ecosystem services